



Complete Summary

GUIDELINE TITLE

Lipid screening in adults.

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Lipid screening in adults.
Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2004 Jun.
18 p. [18 references]

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

- Coronary heart disease (CHD)
- Cardiovascular disease (CVD)
- Peripheral vascular disease (PVD)
- Diabetes mellitus (DM)
- Dyslipidemia

GUIDELINE CATEGORY

Counseling
Evaluation
Prevention
Risk Assessment
Screening

CLINICAL SPECIALTY

Cardiology
Endocrinology

Family Practice
Internal Medicine
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Health Plans
Hospitals
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To increase the percentage of adults with appropriate methods and frequency of cholesterol screening
- To increase the rate of exercise and nutrition assessments in the context of lipid screening of adults
- To decrease inappropriate cholesterol screening of adults

TARGET POPULATION

Patients ages 20 years and older with no history of coronary heart disease (CHD), cerebrovascular disease (CVD), peripheral vascular disease (PVD), and/or diabetes mellitus (DM), and not currently managed for dyslipidemia

INTERVENTIONS AND PRACTICES CONSIDERED

1. Provide education/educational material on the importance of regular lipid screening
2. Measure serum cholesterol fractionation levels (non-fasting)
3. Fasting lipoprotein analysis (measure serum total cholesterol, high-density lipoprotein [HDL]-cholesterol, and triglycerides; calculate low-density lipoprotein [LDL]-cholesterol)
4. Perform nutrition and exercise assessment
5. Assess lifestyle and coronary heart disease risk factors

MAJOR OUTCOMES CONSIDERED

Relative risk of coronary heart disease due to elevated cholesterol in the presence of other risk factors

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

No additional descriptions of literature search strategies are available.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Clinical Validation-Pilot Testing
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Institute Partners: System-Wide Review

The guideline annotation, discussion, and measurement specification documents undergo thorough review. Written comments are solicited from clinical,

measurement, and management experts from within the member groups during an eight-week review period.

Each of the Institute's participating member groups determines its own process for distributing the guideline and obtaining feedback. Clinicians are asked to suggest modifications based on their understanding of the clinical literature coupled with their clinical expertise. Representatives from all departments involved in implementation and measurement review the guideline to determine its operational impact. Measurement specifications for selected measures are developed by the Institute for Clinical Systems Improvement (ICSI) in collaboration with participating member groups following implementation of the guideline. The specifications suggest approaches to operationalizing the measure.

Guideline Work Group

Following the completion of the review period, the guideline work group meets 1 to 2 times to review the input received. The original guideline is revised as necessary and a written response is prepared to address each of the responses received from member groups. Two members of the Preventive Services Steering Committee carefully review the input, the work group responses, and the revised draft of the guideline. They report to the entire committee their assessment of four questions: (1) Is there consensus among all ICSI member groups and hospitals on the content of the guideline document? (2) Has the drafting work group answered all criticisms reasonably from the member groups? (3) Within the knowledge of the appointed reviewer, is the evidence cited in the document current and not out-of-date? (4) Is the document sufficiently similar to the prior edition that a more thorough review (critical review) is not needed by the member group? The committee then either approves the guideline for release as submitted or negotiates changes with the work group representative present at the meeting.

Pilot Test

Member groups may introduce the guideline at pilot sites, providing training to the clinical staff and incorporating it into the organization's scheduling, computer and other practice systems. Evaluation and assessment occurs throughout the pilot test phase, which usually lasts for three to six months. At the end of the pilot test phase, ICSI staff and the leader of the work group conduct an interview with the member groups participating in the pilot test phase to review their experience and gather comments, suggestions, and implementation tools.

The guideline work group meets to review the pilot sites' experiences and makes the necessary revisions to the guideline; the Preventive Services Steering Committee reviews the revised guideline and approves it for release.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The recommendations for lipid screening in adults are presented in the form of an algorithm, [Lipid Screening in Adults](#) with 13 components, accompanied by detailed

annotations. Clinical highlights and selected annotations (numbered to correspond with the algorithms) follow.

Class of evidence (A-D, M, R, X) ratings are defined at the end of the "Major Recommendations" field.

Clinical Highlights

1. Screen men over age 34 and women over age 44 every five years. (Annotation #3)
2. The decision to screen men age 20 to 34 years, women age 20 to 44 years and anyone over 75 years should be based on individual preferences of patient and provider. (Annotations #3,8)
3. Measure cholesterol fractionation and provide nutrition and exercise assessment every five years. If likelihood of follow-up is low and patient is not fasting, consider checking total cholesterol and high-density lipoprotein (HDL) cholesterol. (Annotations #11)
4. If low-density lipoprotein (LDL) greater than or equal to 130 mg/dL, HDL less than 40 mg/dL, or triglycerides greater than or equal to 200 mg/dL, consult the National Guideline Clearinghouse (NGC) summary of the Institute for Clinical Systems Improvement (ICSI) guideline [Lipid Management in Adults](#) and individual case management. The National Cholesterol Education Program Audit Treatment Panel III (NCEP ATPIII) has stated that a person's ideal LDL-cholesterol should be less than or equal to 100 mg/dL. This is a target goal. The benefit of treating patients with an LDL-cholesterol level between 100 mg/dL and 130 mg/dL without known cardiovascular disease (CVD) or diabetes is not known. (Annotation #12)

Lipid Screening in Adults Algorithm Annotations

1. General Awareness Activities

Employer, School and Community Education Activities

The guideline developers acknowledge the crucial role played by education and outreach efforts in helping to increase the number of children and adults who present themselves for appropriate lipid screenings.

Awareness initiative programming includes:

- Posters for company bulletin boards
- Payroll stuffers with general screening information
- General screening information "tents" for tables in reception areas, cafeterias, employee lounges, locker rooms, and other such places

Educational initiative programming includes:

- Articles in employee newsletters, magazines, and/or newspapers
- Nutrition information identified for items available in company cafeterias
- Brown-bag lunch seminars, health fairs

- Direct-mail campaigns with screening information sent to all eligible employees and health plan enrollees

Behavioral change initiative programming includes:

- Incentives for positive changes in behavior through better diets and/or activity levels
- Incentives to increase compliance with and awareness of guideline screening recommendations
- Removal of any time, transportation, or other pragmatic barriers to screening

Information on the importance of regular lipid screening can be included as part of a larger health promotion/disease prevention initiative which includes not only cholesterol and healthy lifestyles but addresses heart disease and appropriate health care utilization as well.

Provider Activities

Educational materials and educational brochures and classes can help support the provider in his or her role as counselor and educator. Face-to-face opportunities to encourage lifestyle change are valuable and do not require excessive time. Consistent praise for an effort begun and encouragement to continue are important.

Health care providers should:

- Establish a process to identify those needing cholesterol screening
- Make educational brochures available at time of visit
- Select educational materials based on a nutrition and exercise assessment
- Utilize a system encouraging patients to attend classes if laboratory results suggest benefit from changing nutritional and/or exercise behaviors

2. Health Care Encounter

A health care encounter is any visit with a provider that yields an opportunity for screening.

3. Age/Gender Criteria

The guideline recommends routine lipid screening for men over age 34 and women over age 44. The guideline recommends that patients and providers discuss the issues surrounding lipid screening with men between the ages of 20 to 34 years and women between the ages of 20 to 44 years.

Evidence supporting this recommendation is of classes: A, B, C, M, R

8. Patient/Provider Discussion

There are no clinical trials that address the treatment of dyslipidemia among men aged 20 to 34 years and among women aged 20 to 44 years, or among men and women over 75 years. Individuals in these age groups should be screened on the basis of their nonlipid risk factors and treatment availability after discussion of patient preference and the risks and benefits of treatment. A specific example would be the need to screen those men aged 20 to 34 years and women aged 20 to 44 years with primary relatives with total cholesterol greater than 300 or history of premature coronary heart disease (CHD). Refer to the National Guideline Clearinghouse (NGC) summary of the Institute for Clinical Systems Improvement's (ICSI) guideline [Lipid Screening in Children and Adolescents](#).

Guidelines for using lipid profiles (serum cholesterol, triglycerides, high-density lipoprotein cholesterol concentrations and calculated or measured low-density lipoprotein concentration) are recommended as screening tests for assessment of cardiovascular risk in adults. The contribution of cholesterol to the risk of coronary artery disease is less in the elderly than in middle-aged adults. There is controversy in screening elderly men and women because there are no primary prevention studies in these populations. The Framingham Study reported that total cholesterol diminishes with age and is not related to coronary disease in men after the age of 65. The Honolulu Study disputed this, describing a correlation persisting through 74 years of age. However, secondary prevention studies have shown a benefit of treatment for hyperlipidemia in older patients that is equal to or greater than younger patients. Therefore, the work group recommends that the provider discuss the risks and benefits and individualize the decision to screen for hyperlipidemia in elderly patients.

Evidence supporting this recommendation is of classes: A, M, R

10. Screening Criteria Met?

It is believed that patients with histories of dyslipidemia, coronary heart disease (CHD), cerebrovascular disease (CVD), peripheral vascular disease (PVD), diabetes mellitus (DM), metabolic syndrome, or who are being case managed for dyslipidemia should not be screened. Their disease management will involve a more aggressive approach to lipid monitoring.

Patients whose health status or life expectancy would not be affected by knowledge of their lipid status (e.g., those with comorbid conditions such as terminal cancer) should not be screened.

In certain circumstances, cholesterol levels may not be representative of a patient's usual levels. These situations include acute illness, hospitalization, weight loss, pregnancy, lactation, or myocardial infarction within the previous three months.

Cholesterol screening is recommended at five-year intervals for those who meet the screening criteria and whose prior screen revealed a total cholesterol of less than 200 mg/dL and HDL-cholesterol of greater than 40 mg/dL.

Evidence supporting this recommendation is of class: R

11. Measure Cholesterol Fractionation/Nutrition and Exercise Assessment

Measurement of serum cholesterol fractionation is recommended for those who meet guideline screening criteria. A 2001 National Cholesterol Education Program (NCEP) statement favors measurement of the more sensitive fasting cholesterol fractionation over the previously recommended non-fasting cholesterol and HDL. Providers may choose to measure non-fasting cholesterol and HDL if they believe the patient is unlikely to return for a fasting test, understanding some dyslipidemic patients will be missed with this approach.

The NCEP Adult Treatment Panel-III (ATPIII) recommends providing education to the patient on modifying CHD risk factors.

Cholesterol screening includes both laboratory testing and a nutrition/exercise assessment.

Providers should conduct a nutrition and exercise assessment in their practice whenever conducting cholesterol screening. Please refer to the nutrition and physical activity sections of the National Guideline Clearinghouse (NGC) summary of the ICSI guideline [Preventive Counseling and Education](#).

During a brief discussion, providers should reinforce the patient's positive behaviors and suggest necessary improvement.

Another opportunity to convey concerns arises when test results are communicated to the patient. A brief written comment on current nutrition and exercise behaviors should accompany the results. The comment should be accompanied by an educational brochure referral to a cholesterol education class if available.

Evidence supporting this recommendation is of class: R

12. Total Cholesterol ≥ 200 ; LDL ≥ 130 ; HDL < 40 ; or Triglycerides ≥ 200 ?

Individuals with a total cholesterol less than or equal to 200 mg/dL (and HDL-cholesterol of 40 mg/dL or above or triglycerides less than or equal to 200) have a desirable cholesterol level and should be advised to repeat cholesterol fractionation (or if likelihood of follow-up is low and patient is not fasting, total cholesterol and HDL-cholesterol testing) in five years.

The NCEP ATPIII has stated that a person's ideal LDL-cholesterol should be less than or equal to 100 mg/dL. This work group acknowledges this as a target goal. It must be noted, however, that the benefit of treating patients with an LDL-cholesterol level between 100 and 130 mg/dL without known CVD or diabetes is not known.

13. Refer to ICSI [Lipid Management in Adults](#) guideline

Individuals with LDL-cholesterol greater than or equal to 130 mg/dL, HDL-cholesterol less than 40 mg/dL, or triglycerides greater than or equal to 200 mg/dL may be at a higher risk of myocardial infarction and/or sudden cardiac death. These patients fall outside the limits of the guideline and should be case managed.

Patients who have been referred for individual case management may return to routine screening practices at their health care provider's discretion. Circumstances that might precipitate a return to routine screening include identification and correction of any underlying cause(s) for secondary dyslipidemia (e.g., thyroid disease), or correction of an underlying risk factor (e.g., smoking) with no other criteria for case management.

Definitions:

Classes of Research Reports

A. Primary Reports of New Data Collection

Class A

- Randomized, controlled trial

Class B

- Cohort study

Class C

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

Class D

- Cross-sectional study
- Case series
- Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports

Class M

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R

- Narrative review
- Consensus statement
- Consensus report

Class X

- Medical opinion

CLINICAL ALGORITHM(S)

A detailed and annotated clinical algorithm is provided for [Lipid Screening in Adults](#).

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The guideline contains an annotated bibliography and discussion of the evidence supporting each recommendation. The type of supporting evidence is classified for selected recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Increased percentage of adults with appropriate methods and frequency of cholesterol screening
- Increased rate of exercise and nutrition assessments in the context of lipid screening of adults
- Decreased inappropriate cholesterol screening of adults

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- These clinical guidelines are designed to assist clinicians by providing an analytical framework for the valuation and treatment of patients, and are not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.
- This clinical guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients are urged to consult a health care professional regarding their own situation and any specific medical questions they may have.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Once a guideline is approved for release, a member group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment, and tobacco cessation.

Detailed measurement strategies are presented in the original guideline document to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

RELATED NQMC MEASURES

- [Lipid screening in adults: percentage of adults with a cholesterol test \(total cholesterol and high-density lipoprotein \[HDL\]-cholesterol\) in the last five years.](#)
- [Lipid screening in adults: percentage of adults with both exercise and nutritional assessments in the context of lipid screening.](#)

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Lipid screening in adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2004 Jun. 18 p. [18 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1995 May (revised 2004 Jun)

GUIDELINE DEVELOPER(S)

Institute for Clinical Systems Improvement - Private Nonprofit Organization

GUIDELINE DEVELOPER COMMENT

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers, Allina Medical Clinic, Altru Health System, Aspen Medical Group, Avera Health, CentraCare, Columbia Park Medical Group, Community-University Health Care Center, Dakota Clinic, ENT SpecialtyCare, Fairview Health Services, Family HealthServices Minnesota, Family Practice Medical Center, Gateway Family Health Clinic, Gillette Children's Specialty Healthcare, Grand Itasca Clinic and Hospital, Hamm Clinic, HealthEast Care System, HealthPartners Central Minnesota Clinics, HealthPartners Medical Group and Clinics, Hennepin Faculty Associates, Hutchinson Area Health Care, Hutchinson Medical Center, Lakeview Clinic, Mayo Clinic, Mercy Hospital and Health Care Center, MeritCare, Minnesota Gastroenterology, Montevideo Clinic, North Clinic, North Memorial Health Care, North Suburban Family Physicians, NorthPoint Health & Wellness Center, Northwest Family Physicians, Olmsted Medical Center, Park Nicollet Health Services, Quello Clinic, Ridgeview Medical Center, River Falls Medical Clinic, St. Mary's/Duluth Clinic Health System, St. Paul Heart Clinic, Sioux Valley Hospitals and Health System, Southside Community Health Services, Stillwater Medical Group, SuperiorHealth Medical Group, University of Minnesota Physicians, Winona Clinic, Winona Health

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SOURCE(S) OF FUNDING

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GUIDELINE COMMITTEE

Preventive Services Steering Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Work Group Members: Tony Woolley, MD (Work Group Leader) (Park Nicollet Health Services) (Internal Medicine); Thomas Kottke, MD (Mayo Clinic) (Cardiology); Patrick O'Connor, MD (HealthPartners Medical Group) (Family Practice); Donald Pine, MD (Park Nicollet Health Services) (Family Practice); William Conroy, MD (Park Nicollet Health Services) (Internal Medicine); Denise Dupras, MD (Mayo Clinic) (Internal Medicine); Phillip Kofron, MD, MPH (Park Nicollet Health Services) (Internal Medicine); Robert Needham, MD (Lakeview Clinic) (Internal Medicine); Suzanne Dvergsten, MD (Allina Medical Clinic) (Pediatrics); Sandy Geifer, RPh (HealthPartners Medical Group) (Pharmacy); Mary Lou Beck, RN (HealthPartners Medical Group) (Nursing); Susan Hanson, RD (Park Nicollet Health Services) (Health Education); Rick Carlson, MS (HealthPartners Medical Group) (Measurement Advisor); Amy Murphy, MHHA (Institute for Clinical Systems Improvement) (Implementation Advisor); Nancy Greer, PhD (Institute for Clinical Systems Improvement) (Evidence Analyst); Barbara Mullikin, MS (Institute for Clinical Systems Improvement) (Facilitator)

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

In the interest of full disclosure, Institute for Clinical Systems Improvement (ICSI) has adopted the policy of revealing relationships work group members have with companies that sell products or services that are relevant to this guideline topic. The reader should not assume that these financial interests will have an adverse impact on the content of the guideline, but they are noted here to fully inform users. Readers of the guideline may assume that only work group members listed below have potential conflicts of interest to disclose.

No work group members have potential conflicts of interest to disclose.

ICSI's conflict of interest policy and procedures are available for review on ICSI's website at www.icsi.org.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Institute For Clinical Systems Improvement (ICSI). Lipid screening in adults. Bloomington (MN): Institute For Clinical Systems Improvement (ICSI); 2003 Jun. 21 p.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](http://www.icsi.org).

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Lipid screening in adults. In: ICSI pocket guidelines. April 2003 edition. Bloomington (MN): Institute For Clinical Systems Improvement (ICSI); 2003 Mar. p. 28-30.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on August 30, 1999. The information was verified by the guideline developer on October 11, 1999. This summary was updated by ECRI on May 15, 2000, December 30, 2003, and August 27, 2004.

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